REMARKS

Claims 21-40 are pending in the application. Claims 44 and 45 are rejected under 35 U.S.C. §112. Claims 41-60 are rejected under 35 U.S.C. §103.

The Rejection Under 35 U.S.C. §112

Claims 44 and 45 are rejected under 35 U.S.C. §112 second paragraph. The Examiner contends that both claims recite "the polymer" in claim 41, and claim 41 recites two polymers: "the uncrosslinked synthetic polymer having a Tg of 76 to 120° C." and "second shine enhancing polymer". The Examiner claims that the claim is indefinite as to which polymer is referred to.

Claims 44 and 45 have been amended to specify that the claims refer to the "uncrosslinked synthetic polymer" of claim 41.

The Examiner is respectfully requested to reconsider the rejection of the claims under 35 U.S.C. §112.

The Rejection Under 35 U.S.C. §103(a)

Claims 41-60 are rejected under 35 U.S.C. §103(a) as unpatentable over Castrogiovanni (U.S. Patent No. 5,505,937), in view of Mercado (U.S. Patent No. 4,996,044), Papantoniou (U.S. Patent No. 3,911,105), Jacks (U.S. Patent No. 5,690,918), Mausner (U.S. Patent No. 5,352,441), and in further view of Kumar (U.S. Patent No. 5,468,477). The Examiner first discusses Castrogiovani, stating that this reference:

teaches a lipstick comprising a polymer, volatile oil, non-volatile oil, particulate pigment, wax employed herein and other ingredients well-known for lipstick, such as wax, isododecane, lanolin oil, dimethylsilicone, cyclomethicone, trioctyldodecyl citrate, etc.....Note the lipstick may also contain polymethylmethacrylate or polyacrylate. See Column 3, lines 25-26.

The Examiner concedes that the primary reference does not teach the methacrylate polymers, vinylpyrrolidone polymers, or fluorinated oil, but that Papantoniou cures this deficiency by teaching:

that polymethacrylate is known to be useful in lipstick composition for its film forming properties with other well-known ingredients such as silicone wax, lanolin oil, etc. .....The employment of such polymer renders the lipstick better quality than those without using polymer....

The Examiner further notes that Mercado teaches the usefulness of polyacrylate polymers in lipstick formulations, and Mausner that copolymers of vinyl pyrrolidone are well known in lipstick. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the lipstick composition of Castrogiovanni by using the combination of acrylate polymer and vinylpyrrolidone copolymer, noting that a person of ordinary skill in the art would have been motivated to modify the lipstick composition of Castrogiovanni et al. using the combination of acrylate polymer and vinyl pyrrolidone copolymer because methyl methacrylate polymer and vinyl pyrrolidone copolymers are known to be useful in lipstick. The Examiner further notes:

it is prima facie obvious to combine two compositions each of which is taught in the prior art to be useful for the same purpose in order to form a third composition that is to be used for very the same purpose; idea of combining them flows logically from their having been individually taught in the prior art; thus, the claimed invention which is a combination of two known film forming polymers known to be useful in lipstick sets forth prima facie obvious subject matter. See In re Kerkhoven, 205 U.S.P.Q. 1069.

Applicants respectfully disagree. Castrogiovanni teaches a transfer resistant lipstick containing a certain silicone resin, volatile solvent, and wax, oil, and pigment. In Column 3,

lines 25-30 the various powders that may be used in the composition are described. More specifically, these powders are dry particulates having a particle size of 0.02 to 50 microns, and it may be colored or non-colored. A laundry list of powders fitting this description is set forth and the powder "acrylates polymer" and "polymethylmethacrylate beads" are included. It is important to note, however, that such types of polymers may be crosslinked or uncrosslinked. In the case where such polymers are present in the form of powders, they are typically crosslinked. Applicants submit the technical literature for such powders, including those taught in Mercado. The document entitled "Information About Specialty Copolymers" describes the physical and chemical characteristics of "acrylates copolymer" one version of which is sold under the trade name "Polytrap Q5-6603". It is described as a highly crosslinked polymethylmethacrylate copolymer powder.

In contrast, the synthetic polymer used in the compositions of the invention is uncrosslinked. Further, it is either soluble in solvents or capable of forming stable dispersions or emulsions in such solvents (see specification, page 6, lines 20-25). The properties of crosslinked polymers from methacrylate ester monomers and similar but uncrosslinked polymers are vastly different.

Applicants submit the Declaration of Anjali Patil demonstrating the difference between the two. In particular, Patil prepared compositions containing an uncrosslinked synthetic polymer which was uncrosslinked polymethylmethacrylate as described in the invention, having a molecular weight of about 15,000, and a crosslinked polymethylmethacrylate Polytrap Q5-

6603, which was a highly crosslinked polymethylmethacrylate. Patil prepared compositions where the polymer was combined with solvents. The uncrosslinked polymethylmethacrylate used in the compositions of the invention dissolved more than 90% in the solvents. More specifically, the polymer dissolved nearly completely leaving only a few small crystals at the bottom of the container. The composition appeared very slightly, almost imperceptibly cloudy. On the other hand, the crosslinked polymethylmethacrylate did not dissolve in the solvents. It hardened in the solvent and formed a white, semi-solid, gelatinous mass. In the compositions of the invention, the point of the synthetic polymer is to form a film on the skin surface to which it is applied. It is clear that the crosslinked polymethylmethacrylate is not a film former, nor is it capable of forming a film when combined with solvents. Moreover it is generally insoluble in solvents. On the other hand, the uncrosslinked synthetic polymer with methacrylate ester monomer units in accordance with the invention dissolved and dispersed in solvent and was capable of forming a film.

The Castrogiovanni lipsticks contain a silicone resin film former, and teach the use of certain particulates that may be present in the powder component of the composition. These particulates are not film forming polymers. Moreover, the "acrylates copolymer" and PMMA mentioned are highly crosslinked polymers which explains why they are present in the particulate form. The claimed composition covers synthetic polymers that are uncrosslinked.

Papantoniou teaches compositions containing certain homopolymers of methyl, fatty chain alkyl acrylates. The fatty chain present makes the polymer more compatible with the fatty

materials typically used in cosmetics, such as waxes and oils. Papantoniou teaches that the polymers can be crosslinked in Column 3, lines 40-60, and even describes the preferred crosslinking agents. Papantoniou does not teach or suggest that the polymer present should have any special Tg., and purports to cover all polymers whether or not crosslinked. Papantoniou draws no distinction between the importance of crosslinking or uncrosslinking, and makes absolutely no reference to the glass transition temperature of the polymer. Moreover, there is nothing in the reference that talks about a shiny finish provided by the cosmetic containing the Papantoniou polymer. There is simply no suggestion that an uncrosslinked synthetic polymer of methacrylate ester monomers should be combined with a second shine enhancing polymer.

This deficiency is not cured by Mercado. This reference teaches cosmetics such as lipstick containing crosslinked methacrylate polymers in powder form. The "acrylates copolymer powder" has a relatively high molecular weight. The preferred polymer is manufactured by Wicken products Incorporated. Applicants enclose the product literature for the "acrylates copolymer powder" taught in Mercado. It is seen that is a white, free flowing powder (e.g. crosslinked), having absorptive properties. The literature does not state that it is a film former, but rather it is a free-flowing powder that is capable of entrapping lipophilic materials. Nothing in Mercado teaches or suggests that any advantage to be derived from using an "acrylates copolymer" that is other than a (crosslinked) powder. Nor does Mercado teach or suggest incorporating a second, shine enhancing polymer into a composition containing an uncrosslinked synthetic polymer from methacrylate ester monomers.

The Examiner relies on Jacks for the teaching that vinyl pyrrolidone polymers are well known film formers in lipsticks (Column 5, line 66 through Column 6, line 100), and the claims of Mausner.

The pyrrolidone polymers taught in Jacks are high viscosity oils. In Column 5, beginning at line 66 Jacks states:

As examples of high viscosity oil soluble liquids mention may be made of, for example, polyvinylpyrrolidone (PVP)/hexadecane and trioctyldodecyl citrate.

The copolymer of PVP that is taught in Jacks appears to be an oil, not a film forming agent. Further, there are many different types of PVP polymers and, as the Examiner well knows, the characteristics of polymers vary widely depending on the molecular weight, and other parameters such as degree of polymerization, crosslinking and so on. There is nothing in Jacks that teaches or suggests that PVP derivatives should be combined with uncrosslinked synthetic polymers of methacrylate ester monomers in order to formulate a transfer resistant lipstick with a shiny finish.

In short, there is nothing in any of the references cited by the Examiner that would lead the skilled artisan to combine an uncrosslinked synthetic polymer from methacrylate ester monomers with a shine enhancing polymer to form transfer resistant compositions that provide a shiny finish. There is simply nothing in the references that teaches any advantage to combining uncrosslinked synthetic polymers from methacrylate ester monomers and a second shine enhancing polymer. Rather, the references tout the benefits of crosslinked acrylates copolymers

as powders, not film formers. In Jacks and Mausner, where PVP derivatives are mentioned, nothing is said about polymers that provide shine and have a refractive index of 1.5 or greater, particularly not when combined with the uncrosslinked synthetic polymer of the invention. There are many types of PVP and derivatives. Obviously, all do not have a refractive index of 1.5 or greater. None of the references teach or suggest the specific polymer fitting this definition, particularly not in combination with the uncrosslinked synthetic polymer.

Claim 45 is rejected over the cited references and further in view of Kumar. The Examiner contends that Kumar teaches isobornyl methacrylate is known to similarly useful as is methyl methacrylate because they polymerize to form polymers with similar glass transition temperatures. The Examiner concludes that the employment of the particular polymethacrylate is seen to be a selection from amongst equally suitable material and as such is obvious.

Applicants respectfully disagree. Kumar teaches copolymers of various types of acrylate and silicone moieties. In the passage from Column 15, line 10 to Column 16, lines 9-11, referred to by the Examiner, lists the many types of organic monomers that may be polymerized with the silicone portion of the polymer to make Kumar's polymers. Applicants claims are directed to a uncrosslinked synthetic polymer that "consists of" the polymerized monomers as defined by the structure in claim 1. Because the polymer "consists of" such monomers, that means that it cannot, by definition, contain silicone monomers. It is not understood how a reference that teaches the criticality of silicone acrylate copolymers can be said to render obvious a claim that is limited to synthetic polymers that specifically exclude silicone. In fact, Kumar states through his

specification, that the objective is to provide improved polymers for use in cosmetics, that exhibit the best properties of silicones and organic polymers. Accordingly, the reference teaches away from compositions that contain polymers that specifically exclude the silicone portion that is the desired feature of Kumar's polymers, whether or not it is isobornyl methacrylate, methyl methacrylate, or some other polymer from methacrylate ester monomers.

With respect to claim 57, also rejected over the references of record, and further in view of Calello: there is nothing in any of the references that teaches or suggests a composition containing an uncrosslinked synthetic polymer in combination with a shine enhancing polymer and further, in combination with a fluorinated oil. Papantoniou, Kumar, Mercado, and Castrogiovanni teach compositions as described above, and not compositions with uncrosslinked synthetic polymers, one or more shine enhancing polymers, in combination with fluorinated oil. The Examiner has failed to point to any suggestion in any of the references for combining the specific ingredients.

Applicants further note that with respect to claims 41-44, 46-56, and 58-60, the Examiner has combined a total of six references to render these claims obvious. With respect to claims 45 and 57, the Examiner combines seven references in his obviousness rejection. It has been well established that many references combined in an attempt to invalidate a patent are an indication that the invention was unobvious. In re Spring Assemblies and Components, (U.S. International Trade Commission, 1981) 216 U.S.P.Q. 225. Nor is it proper to pick and choose among

individual parts of assorted prior art references as a mosaic to recreate a facsimile of the claimed invention. Akzo vs. E.I. Du Pont de Nemours, 721 F.2d at 1552, 220 U.S.P.Q. at 312.

It is Applicants' position that the pending and newly submitted claims are patentable over the many references cited for the reasons set forth herein and in view of the Patil Declaration.

Respectfully Submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Rev 96-3B

In re Application of
Anton, et al.

Serial No. 09/765,703

Filed: January 22, 2001

For: COSMETIC COMPOSITIONS

Examiner: Wang

Art Unit: 1617

X

DECLARATION OF ANJALI PATIL (37 C.F.R. §1.132)

1. I am a co-inventor of the above-mentioned patent application.

2. I have a Ph.D. in polymer chemistry, obtained from the Indian Institute of Technology in Bombay, India, in 1982. I have been employed by Revlon since 1992, conducting research and development in cosmetic products containing novel polymers. Prior to my experience at Revlon I worked for certain companies and universities in the development of new polymers and the study of polymeric structures.

3. I have studied the references of record in the above referenced application, and the following comparative studies are submitted to illustrate the difference between crosslinked and uncrosslinked polymethmethacrylate copolymers. In particular, I prepared compositions as follows:

	Formula							
Ingredient	1	2	3	4	5	6	7	8
PMMA*	1.0	1.0	1.0	1.0				
Acrylates Copolymer**	--	--	--	--	1.0	1.0	1.0	1.0
N-butyl propionate	9.0	--	--	--	9.0	--	--	--
Dibutyl adipate	--	9.0	--	--	--	9.0	--	--
Diisopropyl adipate	--	--	9.0	--	--	--	9.0	--

195705.1

Propylene carbonate	--	--	--	9.0	--	--	--	9.0

*uncrosslinked polymethylmethacrylate, molecular weight 15,000.

**Polytrap Q5-6603, a highly crosslinked polymethacrylate copolymer.

I wanted to compare Polytrap 249, the "acrylates copolymer" taught in Mercado with an uncrosslinked polymethylmethacrylate as taught in the invention. However, I was unable to obtain a sample of Polytrap 249, which was discontinued a number of years ago. Accordingly, I selected a polymethylmethacrylate copolymer that, according to my conversations with the vendor representative, was similar, if not identical to Polytrap 249. The technical literature and datasheets for both the ingredients is enclosed herewith. In addition, to establish that the Polytrap Q5-6603 I selected for comparison was the same as Polytrap 249, I enclose the IR spectrum for Polytrap 249 from our files, and a second IR spectrum from Polytrap Q5-6603, run by Revlon's analytical department. Please note that Polytrap 249 was a raw material used many years ago at Revlon and the IR spectra enclosed was run on a machine that is now obsolete. Accordingly when comparing it to the IR spectrum from Polytrap Q5-6603, run on a newer machine, the spectra look slightly different, but it can be seen that the peaks are the same and do show that Polytrap 249 and Polytrap Q5-6603 are similar synthetic polymers.

The compositions were prepared by combining the polymers and solvent as noted and pouring into glass jars. The jars were heated and shaken to dissolve the polymer and solvent mixture, then allowed to sit a room temperature for 24 hours. After 24 hours had elapsed, the jars containing the compositions were evaluated visually. In each case, the jars containing the solvent and uncrosslinked polymethylmethacrylate were clear, or very nearly clear liquids. The polymer was about 90% dissolved in the solvent, with only a few very tiny particulates at the bottom of the jars. On the other hand, the jars containing the crosslinked

polymethylmethacrylate had formed a semi-solid, gelatinous, white mass that was spongy to the touch.

2. Conclusion: There is a vast difference in properties between crosslinked polymethylmethacrylate polymers and those that are uncrosslinked. The uncrosslinked polymers are largely solvated in solvents and the crosslinked polymers are insoluble in solvents. In my scientific opinion, based upon these results, the uncrosslinked synthetic polymers would be suitable as film formers in cosmetics, where the crosslinked synthetic polymers would not. Moreover, the fact that the crosslinked synthetic polymers formed a white, gelatinous mass would indicate to me that such polymers would not provide a shiny finish to the cosmetic composition into which they were incorporated. Accordingly, the uncrosslinked synthetic polymers provided significantly improved results when compared with crosslinked synthetic polymers.

5. This declaration is made with the knowledge that willful false statements and the like are punishable by fine or imprisonment or both under 35 USC 1001, and may jeopardize the validity of the above identified patent application or patent issuing therefrom.

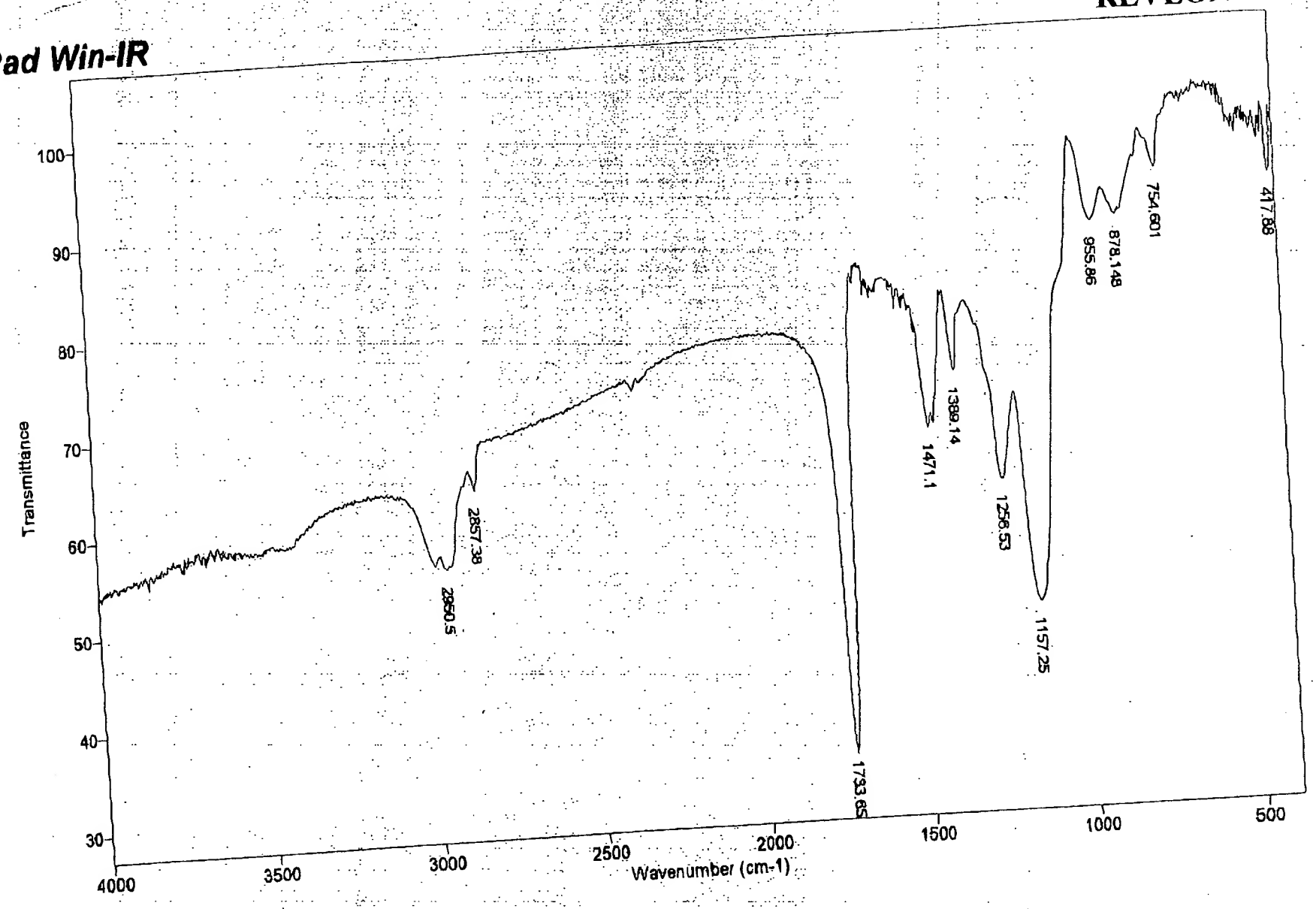
Jan 23, 04
Date

Anjali abhimanyu Patil
Anjali Abhimanyu Patil

195705.1

Bio-Rad Win-IR

REVLON



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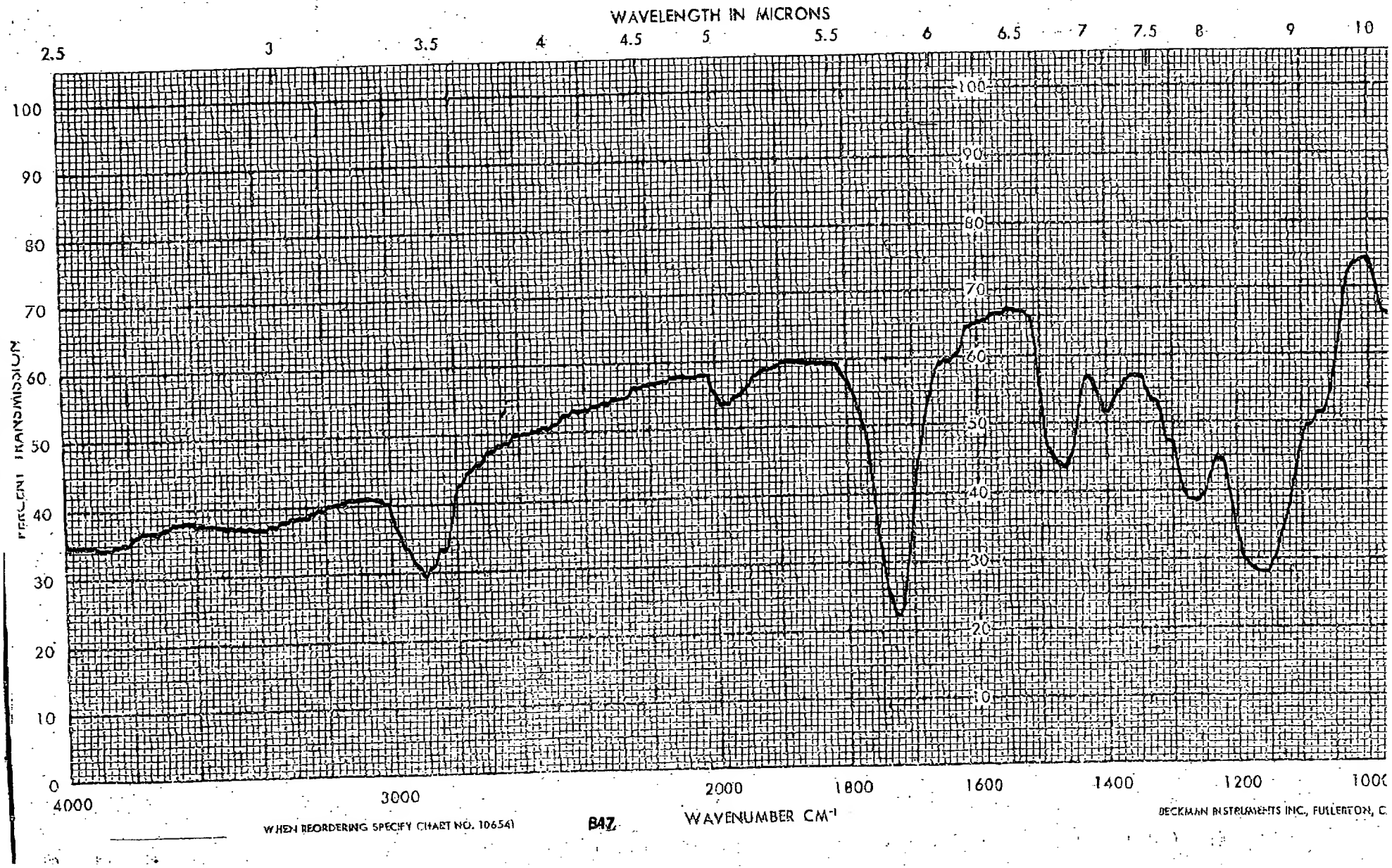
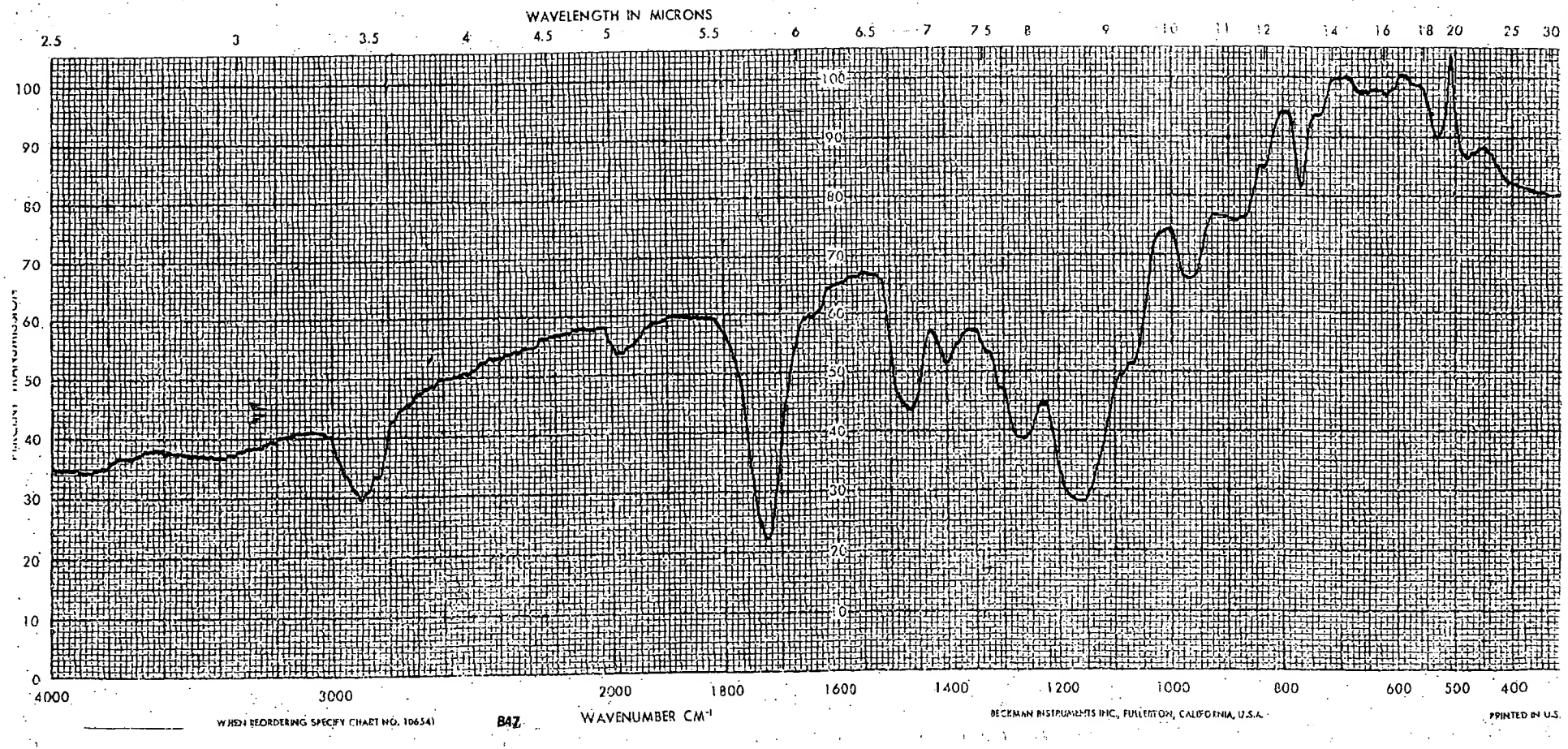
polytrap 249 ; lot # 1H-1



Polytrap 249 . lot # 14-1



Information About Specialty Copolymers

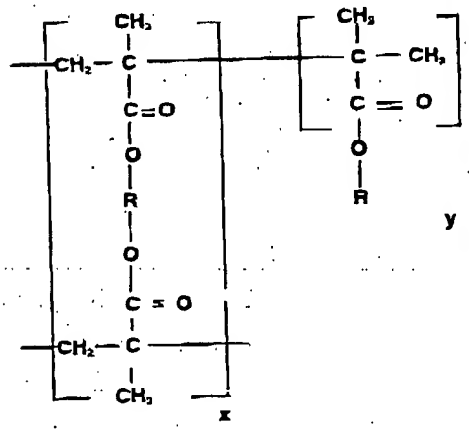
DOW CORNING

POLYTRAP® Q5-6603 POLYMER POWDER

CTFA Name ..... Acrylates copolymer
Physical Form ..... Free-flowing powder
Primary Uses ..... Pigmented make-up, sun-care products, skin creams and lotions, antiperspirants and deodorants, body powders, perfumes and colognes, pressed powders and facial cleansers

DESCRIPTION

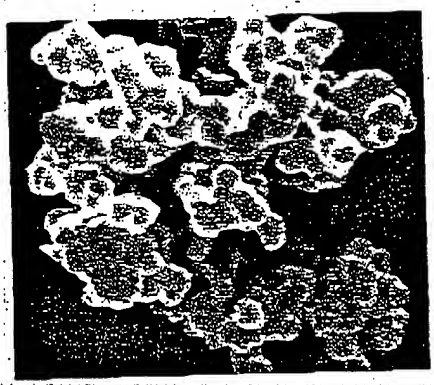
POLYTRAP® Q5-6603 polymer powder is a highly crosslinked polymethacrylate copolymer. The product is an ultralight, free-flowing white powder. Its particles are capable of quickly and selectively adsorbing high levels of lipophilic and certain hydrophilic liquids while maintaining free-flowing powder characteristics. The polymer conforms to the following structure:



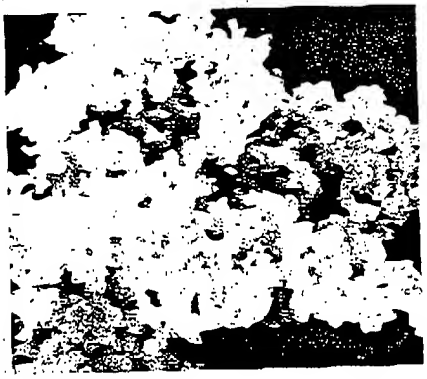
Polymethacrylate

The powder structure consists of unit particles less than one micron that are fused into agglomerates of 20 to 80 microns. These agglomerates are loosely clustered into macro-particles (aggregates) of 200 to 1200 microns in size.

POLYTRAP Q5-6603 polymer powder is capable of containing as much as four times its weight of a wide variety of emulsions, dispersions, milled solids and other liquid systems. The adsorption of actives on POLYTRAP Q5-6603 polymer powder is a physical phenomenon controlled by the wettability of the fluids on the powder surface and the filling of interstitial voids by capillary action.



Agglomerates



Aggregates

The adsorption of fluids by POLYTRAP Q5-6603 polymer powder can be used to control the delivery of a fluid or to selectively adsorb a liquid from a surface (such as oil from the skin).

POLYTRAP Q5-6603 polymer powder will control the delivery of volatile and nonvolatile fluids by two different methods. For volatile fluids, actives are delivered through a capillary action (wicking) from the voids to the powder surface, followed by the subsequent evaporation of the active from that surface. Nonvolatile fluids are delivered by mechanical disruption of the aggregates.

When spread into a thin film on a surface, such as rubbing on the skin,

TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

Color	White
Surface Energy, mNm^{-1}	39.6
Particle Size, aggregates, microns	200-1200
Fundamental Particle Size, microns	< 1
Apparent Density, g/cc (lb/ft^3)	0.06 (3.74)
Surface Area, m^2/cm^3	0.32
Void Volume, cc/g	13.6
Decomposition Temperatur , °C (°F)	> 200 (>392)
Chemical Reactivity	Low
Solubility	Not soluble

Specification Writers: Contact Dow Corning Corporation, Midland, Michigan, before writing specifications on this product.

the adsorbed fluids come into direct contact with the surface.

USES

A variety of cosmetic ingredients such as silicones, esters, mineral oils, solvents, waxes, glycerols, glycols and water can be adsorbed onto POLYTRAP Q5-6603 polymer powder to provide delivery to the skin or to enhance formulation compatibility. These liquids can be adsorbed onto POLYTRAP Q5-6603 polymer powder at high levels while the resulting mixture maintains the characteristics of a free-flowing powder. This allows the formulator greater flexibility and creativity and also facilitates combining materials that are typically incompatible.

Materials that are known to be comedone-producers can be delivered via POLYTRAP Q5-6603 polymer powder, thereby significantly reducing comedone formation potential. Using industry standard test protocols[1], both "in-vivo" and histological testing provide solid evidence that the use of POLYTRAP Q5-6603 polymer powder significantly minimizes (almost to the point of inhibition) comedone formation. The histological photos of rabbit ears demonstrate the effects of using POLYTRAP Q5-6603 polymer powder to significantly reduce comedone formation (Figures A, B, C).

POLYTRAP Q5-6603 polymer powder will adsorb excess oils and sebum from the skin, which will result in less shine and an improved skin surface for make-up application. It may reduce comedones caused by excessively oily skin (Figure D).

POLYTRAP Q5-6603 polymer powder can sustain the delivery of a volatile fluid by significantly reducing the rate of evaporation compared with the fluid when unadsorbed (Figure E).

HOW TO USE

POLYTRAP Q5-6603 polymer powder will quickly and easily adsorb high levels of lipophilic and certain hydrophilic cosmetic materials. Solids or waxes with relatively low melting points can also be adsorbed provided the material is in liquid form long enough for adsorption to be completed.

Adsorption is influenced by such properties as viscosity, surface energy and surface tension. Viscous materials such as glycerin require greater energy for adsorption compared with low-viscosity silicones or mineral oils. Materials with high surface tension can be modified through the use of surfactants or coupling agents to increase adsorption or to facilitate incorporation onto the polymer powder. For example, POLYTRAP Q5-6603 polymer powder will not adsorb water, but 70 percent payloads can be achieved if 0.5 percent octoxynol-9 is used to lower the surface tension.

Adsorption of actives onto POLYTRAP Q5-6603 polymer powder is simply and easily done on a lab scale using a stainless steel mixing bowl and spoon. The cosmetic-grade active or emollient is always added to the polymer powder for the easiest and most efficient adsorption. The spoon is used to gently fold the liquid into POLYTRAP Q5-6603 polymer powder. Low-viscosity fluids are also adsorbed by addition to a sealable vessel containing the polymer and then tumbling the product until uniform.

Blending equipment such as PK, ribbon, or twin-cone blenders will

HISTOLOGICAL EFFECTS OF POLYTRAP Q5-6603 POLYMER POWDER FOR COMEDONE PRODUCTION REDUCTION

FIGURE A

Untreated

- *No comedogenic response*
- *Normal epidermis, hair follicle, and sebaceous gland*

FIGURE B

Neat isopropyl myristate (0.5 g IPM applied to rabbit ear)

- *Significant comedogenic response*
- *Visible hyperkeratosis and acanthosis*
- *Purulent inflammatory cells present*

FIGURE C

Isopropyl myristate post-adsorbed onto POLYTRAP Q5-6603 (0.65 g POLYTRAP and IPM at 70 percent payload [0.46 g IPM])

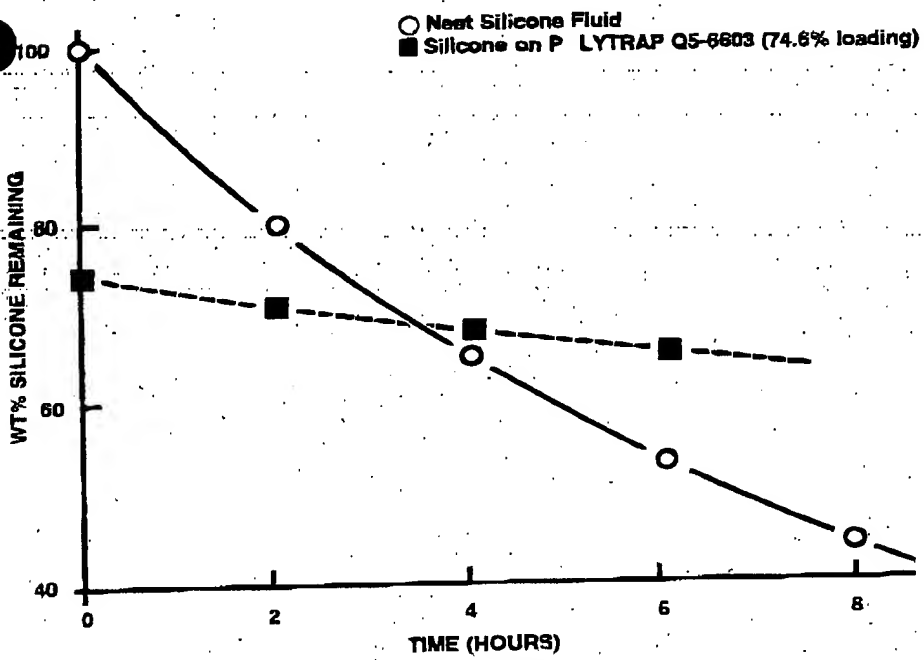
- *No comedogenic response*
- *Normal epidermis and hair follicle*
- *Very minimal lymphatic inflammation of sebaceous gland*

FIGURE D: POLYTRAP Q5-6603 POLYMER POWDER ADSORPTION

Active Ingredient	*Amount Adsorbed per gram of POLYTRAP Q5-6603*
Cyclomethicone	4 g
Dimethicone	3 g
Mineral Oil	3 g
Isopropyl Myristate	3 g
Ethanol	4 g
Fragrances	3 g
Glycerin	2.3 g

[1]Modeled after Kligman, A. M. Arch. Derm 98:53-57.

FIGURE E: EVAPORATION OF VOLATILE SILICONE FLUID FROM POLYTRAP Q5-6603 POLYMER POWDER



successfully blend actives onto POLYTRAP Q5-6603 polymer powder. All blending equipment should be grounded to prevent any static charge or build-up.

Prior to and during the loading process, POLYTRAP Q5-6603 polymer powder is shear sensitive. If too much shear is applied, the polymer will loose some of its adsorptivity. However, after the powder is loaded, the new material is less sensitive and will withstand high shear from high speed mixers or homogenizers.

TOXICOLOGICAL INFORMATION

POLYTRAP Q5-6603 polymer powder is virtually nontoxic when ingested on an acute basis by laboratory rats (LD_{50} >5.0 g/kg body weight). It is unlikely that serious injury would result from ingestion of amounts normally encountered in industrial handling.

Direct eye contact with this material may produce moderate conjunctival irritation with no corneal opacity. Precautions should be taken to avoid direct eye contact with this material. If contamination should occur, the eye should be promptly flushed with copious amounts of water.

This material is considered a non-irritant when applied to the skin of rabbits as defined in 16 CFR 1500.3.

HANDLING

POLYTRAP Q5-6603 polymer powder as an airborne dust is a severe explosion hazard. This material is a very fine organic powder; all precautions regarding handling and storage consistent with this type of material should be observed.

PACKAGING

POLYTRAP Q5-6603 polymer powder is supplied in 1-oz, 3- and 30-lb (28-g, 1.3- and 13.5-kg) containers, net weight.

CAUTION: Container will have product residue when emptied. Follow precautions recommended for handling this product when disposing of container.

SHIPPING LIMITATIONS

None.

STORAGE AND SHELF LIFE

Dow Corning certifies that POLYTRAP Q5-6603 polymer powder, when stored in original, unopened containers, will meet sales specification requirements for a period of 12 months from date of shipment.

NOTE

For answers to any questions regarding the efficacy, safety, health or environmental aspects for using POLYTRAP Q5-6603 polymer powder in any application, contact your nearest Dow Corning Sales Office, or call Dow Corning Customer Service.

MSDS INFORMATION

ATTENTION: PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY WRITING TO DOW CORNING CUSTOMER SERVICE, OR BY CALLING 1-517-496-6000.

WARRANTY INFORMATION – PLEASE READ CAREFULLY

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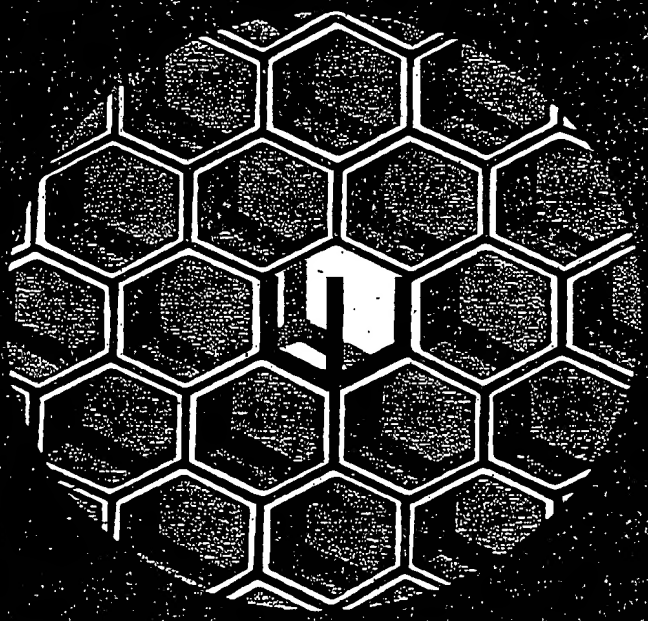


WICKHEN® PRODUCTS INCORPORATED

HUGUENOT, NEW YORK 12746

Chemical Specialties for the Cosmetic, Pharmaceutical and Allied Industries

WICKHEN

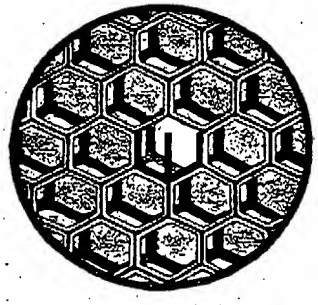
PRODUCTS, INCORPORATED

Wickhen Products, Inc., with offices, laboratories and manufacturing plant in Huguenot, New York, is a major manufacturer of chemical specialties serving the cosmetic, pharmaceutical and allied industries for over 35 years. The ideals of growth and quality control are inextricably blended in our company philosophy. While reaching for the most advanced systems and products, we maintain the highest levels of control and integrity, from basic research, to application, to engineering and manufacture.

Wickhen supplies the industry with the high quality materials needed to meet customer demands for improved product performance and safety. We also offer specialized custom processing, covering a broad spectrum of unique and proprietary products. Personal service has become our international trademark, and we pride ourselves in quick response to inquiries, and immediate delivery of samples anywhere in the world.

WICKHEN PRODUCTS, INC. INTRODUCES POLYTRAP ™

Polymer Entrapment Systems



CONCEPT

Wickhen has achieved a major breakthrough in the chemical specialties industry with the conversion of solid and/or liquid materials into free-flowing beads or powders. This free-flowing form eliminates processing problems associated with functional materials in the liquid or solid state, and offers many unique advantages.

POLYTRAP™ systems entrap functional materials within a hydrophobic polymeric network, with an ideal concentration of 60-80%. Concentrations of up to 90% are possible. The microscopic lattice matrix holds and protects functional materials much as a sponge holds water. The materials are available for release when an external force is applied such as rubbing, pressure, solvent extraction, temperature, etc.

FORM

POLYTRAP™ products are produced as beads which can range in particle size from 0.01 to 3 millimeters. The beads can be soft, liquifying with minimal pressure, or they can be hard and firm. The hard beads have an added advantage of being able to withstand shearing and thus can be supplied as a micronized powder.

The POLYTRAP™ form allows industry more latitude in achieving desired properties for specific formulas, and offers many exciting new product and marketing possibilities.

PROPERTIES

The desirable properties of POLYTRAP™ systems include:

- The ability to convert high payloads of solids and liquids into free-flowing products, from fine powders to large beads.
- The entrapment of a large variety of functional materials, volatile or nonvolatile.
- The ability to hold functional materials for controlled release on demand, including volatility suppression.
- The ability to include built-in stabilizers for product fidelity within the polymeric network.

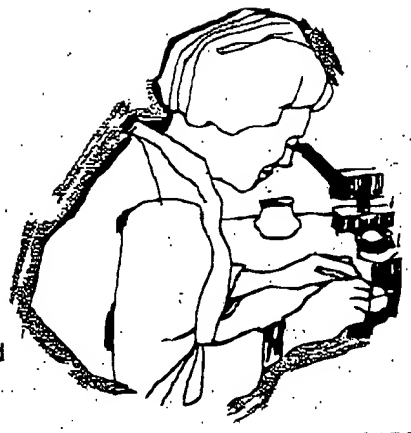
BENEFITS

- Easier processing.
- Shorter production time.
- Improved effjciency of functional materials
- Improved quality of final product.
- Protection of functional materials from oxidation, decomposition, evaporation, and the effects of bacteria, ultraviolet or temperature.
- Broader application possibilities.

APPLICATIONS

The benefits of POLYTRAP™ Polymer Entrapment Systems are applicable to any product formula. In order to demonstrate the advantages and versatility, Wickhen has developed a line of products in the fields of emollients, fragrances, and miscellaneous prototypes including insecticides, flavors, dyes and pigments.

POLYTRAP™ EMOLLIENTS



Four specific emollients, with unique characteristics, were chosen to demonstrate how POLYTRAP™ offers a breakthrough in achieving higher levels of functionality in cosmetic products. The increased levels of active emollients now allow the formulation of an unlimited number of products with improved efficacy.

WICKENOL® 171 (2-Ethylhexyl Oxystearate) is effectively substantive to the skin with particular benefits in soaps and skin care products. However, as a liquid, the concentration level of this functional material is limited. In toilet soap, for example, only 2-4% payload is conventionally used, as higher concentrations result in difficulty in processing, poor extrusions and stamping, and depression of lather.

WAXENOL® 801 (Arachidyl Propionate) is a solid emollient that leaves the skin with a satiny, non-oily feel, and replaces lanolin and its derivatives. It is widely used in skin care products and as a binder for pressed powders.

WICKENOL® 158 (Di[2-Ethylhexyl] Adipate) is a dry emollient that gives the skin a soft finish and leaves no oily after-feel. It can be formulated as an alternative to volatile silicones.

MINERAL OIL is a well known lubricant and cosmetic vehicle.

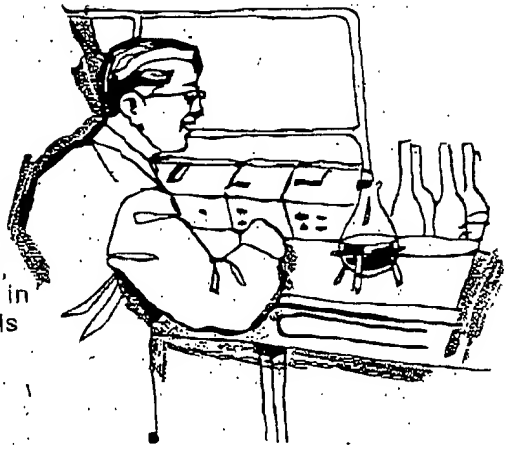
POLYTRAP™ 171, containing a payload of 65-70%, allows the incorporation of higher levels of concentration without these disadvantages (Milled Toilet Soap Formula #S1-A-CO). Toilet Soap can now be offered with improved substantivity without diminishing its foaming qualities. The use of POLYTRAP™ also virtually eliminates cracking and creates a no-mar soap. Anhydrous suspension sticks can also be easily formulated with the **POLYTRAP™** system.

POLYTRAP™ 801, containing a payload of 70-80%, offers all these benefits with the added advantage of increased adhesion, spreadability and feathering. (High Fragrance Dusting/Powder Formula #50-2-CO). Compact powder systems are also significantly improved with the use of **POLYTRAP™**.

POLYTRAP™ 158, containing a payload of 70-80%, can be incorporated into such products as anhydrous suspension stick types with improved functionality.

POLYTRAP™ 229 (Entrapped Mineral Oil) containing a payload of 65-70%, incorporates it's advantages in the free-flowing bead form for more latitude in product development such as emulsion systems and eye area products.

PRODUCT NO.	DESCRIPTION	PAYLOAD	CHARACTERISTIC
POLYTRAP™ 171	2-Ethylhexyl Oxystearate / Polymer Powder	65-70%	Soft, Liquifying
POLYTRAP™ 801	Arachidyl Propionate / Polymer Powder	70-80%	Semi-soft, Liquifying
POLYTRAP™ 158	Di [2-Ethylhexyl] Adipate / Polymer Powder	70-80%	Soft, Liquifying
POLYTRAP™ 229	Mineral Oil / Polymer Powder	65-70%	Soft, Liquifying



POLYTRAP™ FRAGRANCES

PROBLEM:
The addition of fragrance to products such as soaps, powders, sticks, lotions, etc. often cause difficulties in compounding. The concentration level of fragrance is limited, and loss or change of fragrance through volatilization reduces its life in a product.

SOLUTION:
POLYTRAP™ Fragrance Systems eliminate these problems and offer exciting new possibilities in the marketing of fragrance.

Large levels of fragrance, in the form of a free-flowing powder, can now be easily incorporated, for improved product performance without compounding difficulties. The controlled release mechanism of the microscopic polymeric lattice network protects the fragrance from deterioration and increases its longevity.

POLYTRAP™ also makes possible pioneering ideas such as fragrance impregnation into plastics, foams and papers during or after manufacture.

A one-on-one approach with the customer is encouraged to utilize their preferred fragrance. Specific fragrances would be used at the appropriate payload and particle size necessary to function within the customer's concept and objectives. All studies in fragrance compatibility would be undertaken on a proprietary basis in strict confidence.

PRODUCT NO.	FORM	SIZE	PAYLOAD
POLYTRAP™ 223	Small Beads	1 mm	70-75%
POLYTRAP™ 215	Large Beads	1-3 mm	70-75%
POLYTRAP™ 228	Micronized Powder	75 μ	70-75%
POLYTRAP™ 230	Solid	Block	20-60%

POLYTRAP™ MISCELLANEOUS CATEGORIES

POLYTRAP™ Polymer Entrapment Systems enhance the formulation of almost any product with better handling ability, controllable release patterns, increased efficiency and improved formulation utility in comparison to the state-of-the-art.

POLYTRAP ™ offers extensive applications in many fields. The four prototype products listed here are a small sample of the broad spectrum of diversified product possibilities. They demonstrate the compatibility of Polymer Entrapment Systems with almost any functional material.

POLYTRAP™ E-0237 and E-0241 demonstrate how dispersion and uniformity of color can be achieved with POLYTRAP™ systems incorporating dyes and pigments.

POLYTRAP™ E-0232 demonstrates how flavors, such as Creme de Menthe, can be held and protected for controlled release within the polymeric network.

POLYTRAP™ E-0217 demonstrates how the controlled release mechanism allows more efficient utilization of pesticides for insect control.

PRODUCT NO.	DESCRIPTION	CHARACTERISTIC
E-0237	2-Ethylhexyl Oxystearate with 0.15% Dye	Soft, Liquifying, non-staining dye release
E-0241	2-Ethylhexyl Oxystearate with 3.0% Pigment	Soft, Liquifying with Pigment release
E-0232	75% Creme de Menthe	Hard bead or micronized powder
E-0217	60% Diethyl Toluamide	Hard bead or micronized powder

POLYTRAP™ PRODUCTS AND CUSTOM PROCESSING

The following chart lists applications for specific POLYTRAP™ products described in this brochure. However, the applications for POLYTRAP™ Polymer Entrapment Systems are virtually unlimited. Wickhen has the custom processing and design capabilities for the POLYTRAP™ products industry needs to alleviate problems and achieve desired formula properties.

SUGGESTED AREAS OF APPLICATIONS

CONTENT	PRODUCT NO.	Soap	Dusting/Baby Powder	Solids	Suspensions/Emulsion Systems	Pressed Powders	Makeup	Candles	All Emollients
EMOLLIENTS	POLYTRAP™ 174	X	X	X	X	X	X		
	POLYTRAP™ 801	X	X	X	X	X	X		
	POLYTRAP™ 158		X	X	X	X			
	POLYTRAP™ 228		X	X	X	X			
FRAGRANCES	POLYTRAP™ 223				X				X
	POLYTRAP™ 215								X
	POLYTRAP™ 224	X	X	X				X	X
	POLYTRAP™ 230								X
MISC	E-0237	X		X		X	X		
	E-0241				X	X	X		
	E-0217		X	X				X	

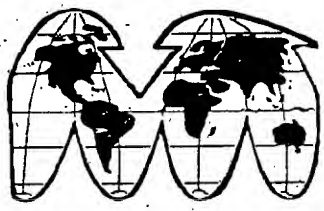
CTFA NAME

ACRYLATES COPOLYMER is the CTFA adopted name for the polymeric portion of POLYTRAP™

TOXICOLOGY

Primary irritation studies, consistent with the test protocol defined in the Federal Hazardous Substance Act (Title 16 CFR, Section 1500.41) have been conducted on the blank polymer system, entrapped Wickhen emollients and on a POLYTRAP™ fragrance. Toxicological and safety profiles indicate that these materials are not primary irritants. Toxicology studies and safety profiles are available upon request.

WICKHEN SERVES THE WORLD



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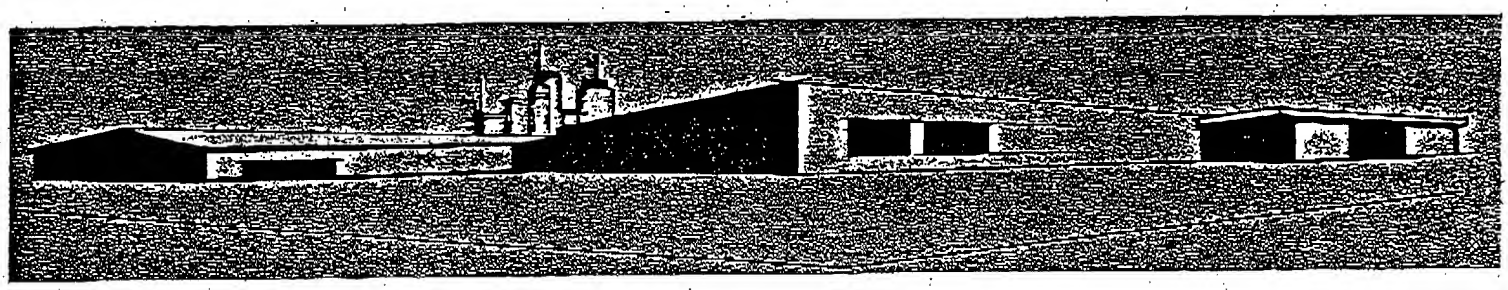

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